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Women's Rights and the Gender Migration Gap *

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Abstract

This is the first global study of how institutionally entrenched gender discrimination affects the gender migration gap (GMG) using data on 158 origin and 37 destination countries over the period 1961-2019. We estimate a gravity equation derived from a random utility maximization model of migration that accounts for migrants' gender. Instrumental variable estimates indicate that increasing gender equality in economic or political rights generally deepens the GMG, i.e., it reduces female emigration relative to that of men. In line with our theoretical model, this average effect is driven by higher-income countries. In contrast, increased gender equality in rights reduces the GMG in lower-income countries by facilitating female emigration.

Key words: Discrimination, Gender equality, Individual rights, Migration, RUM model.
JEL classification: F22, J16, J71, K38, O15, P48.

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1 Introduction

The existence of a gender gap in international migration is well documented and although it has shrunk significantly over time, it continues to exist to this day (Donato and Gabaccia, 2015; Gabaccia and Zanoni, 2012). Between 2010 and 2019, for example, only 47% of all recorded migrants were women (DEMIG, 2015; OECD, 2020). Nevertheless, economics still largely ignores gender in international migration. This is although gender has become a central topic of study in almost all fields of applied economics (see, e.g., Alesina, Giuliano and Nunn, 2013; Beblo, Görges and Markowsky, 2020; Doepke, Tertilt and Voena, 2012; Duflo, 2012; Fernández, 2014; Geddes and Lueck, 2002; Olivetti and Petrongolo, 2016; Voigtländer and Voth, 2013).

This paper studies a so far largely unexplored cause of the gender migration gap: the lack of women's rights and gender discrimination in countries of origin. The gender composition of international streams of migrants can have significant consequences for optimal policy. Migrants' gender may, for example, affect how easily and in what sectors they can be integrated into the labor market (Blau, Kahn and Papps, 2011; Brell, Dustmann and Preston, 2020). Moreover, gender appears to be related to migrants' propensity to commit crimes in the host country and the host population's tolerance towards male and female migrants seems to differ (Bansak, Hainmueller and Hangartner, 2016; Bell, Fasani and Machin, 2013; Dancygier et al., 2022).

Our empirical analysis is based on a gravity model derived from a random utility maximization (RUM) model of migration featuring gender-specific utility functions. To mitigate threats to causal identification, we instrument individual rights in an origin country with spatial lags of the rights in other countries weighted by their geographical distance (Plümper and Neumayer, 2010). The theoretical rationale behind this instrument is that individual rights in proximate countries affect the rights enjoyed by individuals in the origin country itself via spatial diffusion (see, e.g., Elkins and Simmons, 2005; Goderis and Versteeg, 2014; Gründler and Köllner, 2020; Miho, Jarotschkin and Zhuravskaya, 2022; Neumayer and de Soysa, 2011).

For our analysis, we combine two datasets on bilateral migration flows provided by the OECD and DEMIG-C2C. Our independent variables of interest are indicators of gender differences in political and economic rights in countries of origin. We use political rights and civil liberties scores from the Varieties of Democracy project (V-Dem), and economic rights measures by the World Bank's Women, Business and the Law report (WBL). Our dataset covers 158 origin countries and 37 destination countries from 1961

to 2019. The destination countries are mostly OECD and high-income countries. We find that improving gender equality in both types of rights deepens the gender migration gap (i.e., women migrate even less relative to men).

We find that increasing equality in economic (political) rights by one standard deviation leads to a 5.6% (37.4%) increase in the gender migration gap. A comparison of the effect of gender equality in countries with different income levels shows that improving gender equality in economic or political rights reduces the gender migration gap in the poorest countries, whereas richer countries are driving the overall result that the gender migration gap deepens. Our findings, therefore, suggest that improving rights helps alleviate the cost of migration, which otherwise prevents women in poor countries from emigrating. Since Iran, for example, gave women the right to vote in 1963, the gender migration gap declined steadily until shortly before the Islamic Revolution in 1979. During this time, *de jure* equality in economic rights remained constant, but women joined the workforce in large numbers. In richer countries, where financial constraints are less binding, improving rights primarily reduces the incentives for women to leave the country and thus has the opposite effect. Estonia, for example, has improved women's (*de jure*) economic rights dramatically during the 2000s and the gender migration gap also rose steadily during that time. Over the following decade, both women's economic rights and the gender migration gap remained stable. Our quantitative results are not only consistent with qualitative country cases, but they also prove to be robust with respect to using alternative indicators of gender equality, model specifications, estimation strategies, and instrumental variables.

Our study contributes to a small strand of literature concerned with the effect of gender discrimination on female migration or on gender differences in migration. Ruyssen and Salomone (2018) is the seminal contribution to this literature. Ruyssen and Salomone measure the effect of individual perceptions of gender discrimination on both stated intentions and preparations to migrate abroad. Their study shows that women, and to a lesser extent men, are more likely to report intentions to emigrate if they feel that females are not treated with respect. Interestingly, neither men nor women are more likely to report having started preparations for moving abroad in light of perceived hostility towards females. This would suggest that men and women do not change their migration behavior based on gender discrimination. Our study adds to the work of Ruyssen and Salomone (2018) by studying observed migration flows rather than stated intentions and reported preparations to migrate. Moreover, we rely on expert ratings of the level of gender discrimination in origin countries rather than migrants' own perception

of whether women are treated with respect. This should largely mitigate the problem that indicators of institutional quality that are based on citizens' perceptions can be biased by other conditions in the home country (such as economic growth) that might be causes of migration themselves (Gutmann, Padovano and Voigt, 2020). Unlike Ruyssen and Salomone (2018), we find that migration is affected by gender equality in the origin country.

Neumayer and Plümper (2021) show that the absence of economic rights for females in origin countries can explain part of the gender gap in migration to Germany. They report that less than 45% of the migrant population in Germany is female. The share increases by about 1.7 percentage points if women's economic rights in the origin country increase by one standard deviation. While Neumayer and Plümper (2021) study one destination country over one decade (2009-2017), our analysis covers more than three dozen destination countries and half a century of migration data. Our dataset allows us to control not only for all unobserved drivers of migration that are specific to a country-dyad, but also for unobserved destination-year-specific causes of migration. The causal interpretation of Neumayer and Plümper (2021)'s results rests either on the assumed exogeneity of women's rights or the correct specification of the lag structures in their GMM estimator. In contrast, we introduce a theoretically justified IV strategy. Neumayer and Plümper (2021) find that increasing economic rights in the origin country is associated with more female migration, which is the opposite of what we find. However, if we restrict our sample to (both) Germany as the destination country and the time period 2009-2017, we also find a negative effect on the gender migration gap. In other words, we can replicate the results of Neumayer and Plümper (2021), but they do not generalize to our substantially larger sample – the global effect even appears to have the opposite sign. Our study also contributes to the broader literature on institutions and migration (see Baudassé, Bazillier and Issifou, 2018, for a survey). Our empirical analysis is of particular interest to this broader literature, as we study the effects of *differences in* rights (i.e., institutional quality) of two populations in the same country on *differences in* their propensity to emigrate (i.e., the gender migration gap). This means that we are dramatically reducing the scope for omitted variable bias compared to studies that compare the propensity to emigrate of different populations only across countries and over time. In the next section, we introduce our data on migration and gender equality and we present some stylized facts. Section 3 introduces our RUM model and derives our hypotheses. Section 4 introduces our empirical strategy and discusses endogeneity concerns. Section 5 presents our results for the gender migration gap as well as for female

migration. It also discusses a wide range of model extensions and robustness tests before Section 6 concludes.

2 Data and descriptive statistics

2.1 The data

Migration data. We use gender-specific bilateral migration flows from the OECD International Migration Database (OECD, 2020) for the period 1996-2019. Since OECD data is not available for earlier years, we rely on the DEMIG-C2C dataset from the International Migration Institute of Oxford University for the period 1961-2011 (Vezzoli, Villares-Varela and de Haas, 2014; DEMIG, 2015)[1]. Both databases measure flows of foreign nationals and were compiled through collection and digitization of historical national statistics in combination with current electronic sources. The data exclude irregular migrants and do not allow for distinguishing migrants based on their profiles, such as economic versus political migrants.[2] For each origin-destination-year observation, we rely on the migration flows reported in the OECD data. If this information is missing, we rely instead on the migration flow reported in the DEMIG C2C dataset. Note that when flows are available from both OECD and DEMIG C2C data, the value reported is virtually the same ($r = 0.99$). To what extent our dataset is composed of these two data sources at different points in time is shown in Figure A.1 in the appendix. Due to the combination of different data sources and the general properties of migration data, we smooth bilateral migration flows using a 5-year rolling window from $t-2$ to $t+2$, which is commonly done in the literature (e.g., Becketti, 2020; Standaert and Rayp, 2022).

Then, we combine the migration data with information on origin countries' gender-specific population size from the World Bank's World Development Indicators to compute gender-specific bilateral migration rates. Following the RUM-based literature in migration economics, we define the migration rate as the directional migration flow between two countries divided by the origin country's population size. Note that we exclude observations in which the log-GMG is not defined because the male migration flow is zero, which reduces the sample size by 3.85%.

[1] There are a few alternative datasets available from Eurostat that are referenced in Abel (2022). These datasets, however, cover a shorter time period than our study.

[2] We use OECD data on flows of foreign *workers* as a robustness test in Table A.12 in the appendix.

In a final step, we compute the gender migration gap (GMG) as the (log) ratio of the bilateral migration rate of males over that of females.[3] Note that the computation of our GMG is analogous to the gender wage gap, which indicates that females earn less than males when the gap is positive (see Oaxaca, 1973; Blau and Kahn, 2017). This means that larger values in the GMG indicator reflect less female – relative to male – migration.

Data on the protection of individual rights. Political scientists have made substantial progress in recent years in measuring differences between men and women in the protection of their individual rights. We draw on indices of legal restrictions that apply specifically to women and come from the World Bank's Women, Business and the Law report (WBL, World Bank, 2022*a*) and the Varieties of Democracy project (V-Dem, Coppedge et al., 2022).

The WBL dataset measures (*de jure*) legal differences between men and women in their access to economic opportunities based on the assessment of legal experts in the areas of criminal, family, and labor law. Experts' answers are based on codified laws and cover 190 economies over the period 1970-2021. This index has been used in recent economic literature on women's rights (e.g., Davis and Williamson, 2022; Lo Bue et al., 2022; Pande and Roy, 2021; Tertilt et al., 2022). It aggregates 35 binary indicators into eight dimensions representing different phases of a woman's life cycle: mobility, workplace, pay, marriage, parenthood, entrepreneurship, assets, and pensions. Lower index values indicate fewer economic rights of women compared to men. In our baseline analysis, we focus on the dimension concerning differences in pay (labeled *GR3_Pay*), as it provides a clear indicator of economic rights. It includes legal measures related to equal remuneration as well as women's ability to work at night, hold a dangerous job, and work in the industrial sector as men do. One advantage of this indicator is that the respective forms of gender discrimination are particularly prevalent around the globe (Hyland, Djankov and Goldberg, 2020), which facilitates cross-country analysis.

V-Dem attempts to measure the design and enforcement of various political and legal institutions based on the assessment of over 3,500 country experts, such that the resulting *de facto* indicators are comparable across countries and over time. The dataset

[3]We use the ratio rather than the absolute difference between female and male bilateral migration rates, not only because of its theoretical foundation, but also because changes in the absolute difference can be misleading. For instance, if women and men experience a proportional increase in their respective migration rates, the change in our preferred indicator would be zero. In contrast, the change in the absolute difference would be larger than zero. Note that taking the log here does not reduce the size of the sample for which information on our control variables is available.

contains information on 202 countries over the period 1789-2020. Differences between the political rights and civil liberties of women and men are captured by V-Dem's Exclusion by Gender Index (labeled *v2xpe_exlgender*). In its original version, high index values indicate that women are denied access to public services or participation in governed spaces in comparison to men. We reverse this scale to match that of the WBL indicators and to simplify the interpretation of our results. Thus, higher values from here on indicate more equal rights and less discrimination.

Other data sources. We use control variables from various sources. The origin country's income per capita comes from the World Bank's World Development Indicators. We also use indices of civil violence, interstate war, and democracy from the Polity5 Project (Marshall, 2019, 2020). Finally, we use CEPII's gravity database to obtain dyadic variables needed to perform gravity-type analyses (Head, Mayer and Ries, 2010). A detailed description of the construction of our variables is provided in Table A.1 in the appendix.

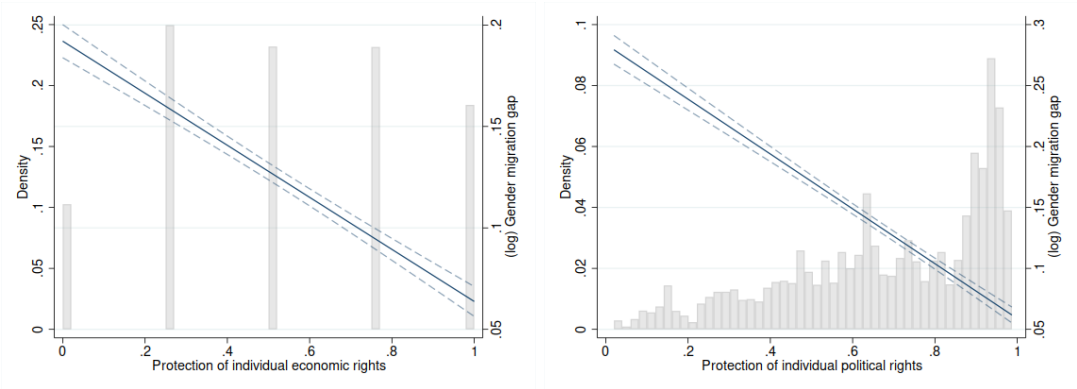
2.2 Descriptive statistics and stylized facts

Our combined dataset covers 158 origin countries and 37 destination countries from 1961 to 2019. It contains 77,269 origin-destination-year observations. Summary statistics are provided in Tables A.2 and A.3, and Table A.4 lists the countries included in our analysis.

In 2019, the GMG was still a prevalent phenomenon across the globe, as male emigration exceeded female emigration in 64% of the countries in our dataset. We provide a scatter plot of the relationship between the (log) emigration rates of females and males across origin countries in Figure A.2. This figure illustrates substantial heterogeneity across countries. Some countries, for example in Sub-Saharan Africa, exhibit a sizable GMG, while countries like Brazil, Madagascar, Qatar, the Philippines, and Singapore exhibit disproportionate female emigration.

Figure 1 depicts the statistical relationship between the gender gap and gender equality in the protection of individual rights. The graph on the left (/right) shows the GMG conditional on economic (/political) rights. The regression lines indicate the predicted GMG together with 95%-confidence bands. For both types of rights, we find a negative relationship between the GMG and the protection of individual rights. Although this evidence should not be interpreted as causal, it suggests that economic and political individual rights play a similar role in individuals' migration decisions.

Figure 1: Equality in Individual Rights and the Gender Migration Gap



Note: Statistical relationship between gender equality in the protection of individual rights and the GMG, measured as the (log) ratio of the bilateral migration rate of males over that of females. We use the residual of each variable obtained after controlling for origin-destination and destination-year fixed effects. The graph on the left (/right) depicts the GMG at different levels of equality in economic (/political) rights. The histograms and the left vertical axes show the distribution of the individual rights indices. The regression lines and the right vertical axes show the predicted GMG together with 95%-confidence bands.

3 Theoretical underpinnings

3.1 A random utility maximization model of gender-specific migration

In this section, we build a random utility maximization (RUM) model that integrates the gender dimension of migration in order to guide our empirical analysis. The RUM model was first introduced by Roy (1951) and later extended and applied to migration by Borjas (1987). Grogger and Hanson (2011) and Beine, Docquier and Özden (2011) have developed the RUM model further. In recent years, it has become the workhorse model for analyzing the determinants of international migration and migration policies (see Beine, Bertoli and Fernández-Huertas Moraga, 2016, for a survey of the RUM model of migration).

We model the migration decision of an individual i with gender $g = \{f, m\}$ (for *female* and *male*) at time t who considers D possible destination countries, including their current country of residence. We refer to the latter as the origin country o. $U_{igod,t}$ denotes the net utility (accounting for migration costs) that an individual i with gender g who lives in country o obtains from migrating to country d at time t. The individual chooses

the destination country that maximizes their net utility: $U_{igod,t} = \max_{l \in \{1,\ldots,D\}} U_{igol,t}$. We assume that individuals take myopic decisions, i.e., they choose independently in each time period whether and where to migrate (Beine, Bertoli and Fernández-Huertas Moraga, 2016).

At time t, individual i's net utility of migrating from country o to country d can be decomposed into the gender-specific deterministic component (or gross utility) derived from living in country d ($W_{god,t}$), the gender-specific cost of migration to country d ($C_{god,t}$, with $C_{goo,t} = 0$), and an individual-specific stochastic term ($\varepsilon_{igod,t}$), as follows:

$$U_{igod,t} = W_{god,t} - C_{god,t} + \varepsilon_{igod,t} \tag{1}$$

As is standard in the literature, $\varepsilon_{igod,t}$ is independently and identically distributed over individuals, destinations, and time. It follows a univariate extreme value type-1 distribution with a unit scale parameter.

Following McFadden (1974, 1984), one can obtain the unconditional probability that a given individual with gender g relocates from country o to destination d at time t:

$$p_{god,t} = \frac{e^{\left(W_{god,t} - C_{god,t}\right)}}{\sum_{l=1}^{D} e^{\left(W_{gol,t} - C_{gol,t}\right)}} \tag{2}$$

as well as the unconditional probability that a given individual of gender g remains in their origin country o at time t:

$$p_{goo,t} = \frac{e^{\left(W_{goo,t}\right)}}{\sum_{l=1}^{D} e^{\left(W_{gol,t} - C_{gol,t}\right)}} \tag{3}$$

The ratio of these two probabilities gives the gender-specific bilateral migration rate at time t:

$$\mathrm{M}_{god,t} = \frac{p_{god,t}}{p_{goo,t}} = e^{\left(W_{god,t} - W_{goo,t} - C_{god,t}\right)} \tag{4}$$

This ratio depends on the characteristics of the origin and the destination country, as well as the bilateral migration costs. It exhibits the convenient independence of irrelevant alternatives property, which implies that any change in the attractiveness or accessibility of other potential destinations will not affect the bilateral migration rate from country o to country d.

We define the *gender migration gap* (GMG), as the bilateral migration rate of males relative to females. We subtract the (log) female-specific migration rate from the (log)

male-specific migration rate, as follows:

$$\ln \mathrm{GMG}_{od,t} = \ln \frac{\mathrm{M}_{mod,t}}{\mathrm{M}_{fod,t}} = \Delta_{mf} \left(W_{od,t} - W_{oo,t} \right) - \Delta_{mf} C_{od,t} \tag{5}$$

This equation implies that only factors that *differently* affect the propensity of males and females to migrate can change the GMG (as is also argued by Neumayer and Plümper, 2021). $\Delta_{mf} \left(W_{od,t} - W_{oo,t} \right)$ denotes the systematic difference in the gross utility derived by males and females who migrate from the origin country o to the destination d, for example, due to a gender wage gap in either country. $\Delta_{mf} C_{od,t}$ denotes the systematic difference in migration costs between women and men, e.g., in terms of transportation costs or the cost of learning a new language (Beine and Salomone, 2013).

The GMG is positive when males migrate more than females, and it is negative when females migrate more than males. As the gap is positive on the global level, we are always referring to factors that increase the GMG (i.e., factors that favor male over female migration) as *deepening* the gap between men and women and to factors that reduce the GMG as *closing* the gap between men and women, although in some countries women emigrate more than men. Furthermore, assuming that males migrate more than females, implies that $\Delta_{mf} \left(W_{od,t} - W_{oo,t} \right) > \Delta_{mf} C_{od,t}$. In this case, without loss of generality, we assume that incentives to migrate are lower for females than for males, $\Delta_{mf} \left(W_{od,t} - W_{oo,t} \right) > 0$, and that migrating is more costly for females than for males, $\Delta_{mf} C_{od,t} < 0$.

We acknowledge the frequent interdependence between the migration decisions of women and men and that social norms or laws may prevent women from migrating independently or accompanied by males other than their spouse (see, e.g., Docquier et al., 2012, who highlight the importance of accounting for such interdependence). Yet, since all factors that influence males and females equally cancel each other out in our model by subtraction, joint migration decisions cannot influence the GMG (see Bansak, Simpson and Zavodny, 2021, for a review of family migration decisions). Since focusing on the GMG obscures whether it is indeed women who respond to changes in gender equality, female migration is also studied separately in Section 5.

3.2 Gender equality in rights and the gender migration gap

Here, we are interested in the impact of gender equality in individual rights on the GMG. The level of equality in individual rights of women and men is denoted by $\mathrm{Rights}_{o,t}$, with higher values indicating more equality between women and men and less discrimination against women.

Gender inequality can materialize itself in a broad range of (unequally protected) rights. We focus on two of the most important categories of individual rights: i) economic rights and ii) political rights and civil liberties. Economic rights facilitate the pursuit of economic opportunities and are therefore essential to individuals' ability to generate income. Political rights and civil liberties (henceforth political rights) include the rights to access public services such as the judicial system, to participate in the political decision-making process, and to assemble, move and speak freely. In short, these rights determine individuals' ability to participate in public life. The theoretical arguments regarding political individual rights are largely analogous to those concerning economic individual rights. Both types of individual rights empower individuals by enabling them to freely make decisions and act on them. This is why we do not distinguish them in the following theoretical discussion, in spite of them being evaluated separately in the empirical analysis.

We expect increasing gender equality in the protection of individual rights to affect the GMG through i) equalizing incentives to migrate and ii) equalizing bilateral migration costs across genders – or expressed formally:

$$\partial \frac{\Delta_{mf}\left(W_{od,t} - W_{oo,t}\right)}{\partial \text{Rights}_{o,t}} < 0 \quad ; \quad \partial \frac{\Delta_{mf} C_{od,t}}{\partial \text{Rights}_{o,t}} > 0 \tag{6}$$

On the one hand, more equality in rights in the origin country increases females' gross utility of staying and hence decreases their incentives to emigrate. All things being equal, the GMG could deepen with more equality in rights (*gross-utility effect*). On the other hand, more equality in rights decreases the difference in migration costs of females and males in the origin country. All things being equal, the GMG could be reduced by more gender equality in rights giving females more equal financial means to emigrate (*cost effect*).[4] This allows us to formulate two competing hypotheses:

Hypothesis 1a *Increasing gender equality in rights deepens the gender migration gap (the gross-utility effect dominates).*

Hypothesis 1b *Increasing gender equality in rights reduces the gender migration gap (the cost effect dominates).*

Furthermore, the described average effect of increasing gender equality in individual rights may hide substantial effect heterogeneity induced by the characteristics of the

[4]The standard RUM model does not explicitly account for individuals' budget constraint (Beine, Bertoli and Fernández-Huertas Moraga, 2016). The latter is only indirectly taken into account by assuming that bilateral migration costs are negatively correlated with income in origin countries.

origin country. Specifically, we expect that effects differ between low- and high-income countries. For instance, in higher-income countries, economic opportunities and the non-pecuniary value of rights may be of more value to women. In other words, one can assume that gender equality is a normal good, and that the demand for equality is less price elastic in richer countries.

At lower income levels, individuals are more financially constrained while facing stronger incentives to emigrate. Income generated by increased economic rights should allow women to overcome these financial constraints. In other words, the cost effect may dominate the gross-utility effect. On the contrary, at higher income levels, individuals have the financial means to emigrate and it is more important whether they have an incentive to do so. Thus, the gross-utility effect may dominate the cost effect.

$$\partial^2 \frac{\Delta_{mf}\left(W_{od,t} - W_{oo,t}\right)}{\partial \text{Rights}_{o,t} \partial \text{Income}_{o,t}} < 0 \;\; ; \;\; \partial^2 \frac{\Delta_{mf} C_{od,t}}{\partial \text{Rights}_{o,t} \partial \text{Income}_{o,t}} < 0 \tag{7}$$

In its most extreme form, Equation (7) implies that the effects of increasing gender equality in high- and low-income countries operate in opposite directions. This can be expressed as the following hypothesis:

Hypothesis 2 *Increasing gender equality in rights reduces the gender migration gap in low-income countries and deepens it in high-income countries.*

Note that Hypothesis 2 is compatible with both Hypothesis 1a and Hypothesis 1b.

4 Empirical strategy

4.1 Baseline specification

Equation (5) can be rewritten as the following gravity equation:

$$\ln \text{GMG}_{od,t} = \beta_0 + \beta_1 \text{Rights}_{o,t-1} + \Gamma \boldsymbol{X}'_{o,t-1} + \gamma_{d,t} + \delta_{od} + \epsilon_{od,t} \tag{8}$$

where the dependent variable, $\ln \text{GMG}_{od,t}$, is the logarithm of the gender migration gap from origin country o to destination country d at time t.

The independent variable of interest, denoted $\text{Rights}_{o,t-1}$, is the level of gender equality in the protection of individual rights in the origin country o at time $t-1$. Hereinafter, we distinguish gender equality in economic rights ($\text{EconRights}_{o,t-1}$) from gender equality in political rights ($\text{PolRights}_{o,t-1}$). We assume that gender equality in the protection of individual rights affects the GMG with a one-year lag.

In addition, we control for a set of one-year lagged origin country characteristics that might differently affect females' and males' decisions to emigrate. This vector of controls, denoted $\boldsymbol{X}'_{o,t-1}$, includes the (log) GDP per capita and indicators of civil violence, interstate war, and democracy. GDP per capita is a proxy for the wage level and the standard of living in the origin country. It impacts the migration of females and males differently, if access to economic opportunities and resources is unequally distributed across genders. Similarly, democratic institutions affect the GMG, if they grant males and females different opportunities and safeguards against repression. The occurrence of conflict has already been shown to affect women more than men (Plümper and Neumayer, 2006).

Observable and unobservable characteristics of the destination country that could determine the GMG, such as immigration policies, are accounted for using destination-time fixed effects, denoted $\gamma_{d,t}$. These fixed effects also account for general time trends across countries that affect women and men differently, such as global labor demand in different sectors (Neumayer and Plümper, 2021). We do not need to account for factors that equally affect women's and men's decision to migrate, such as network effects (Beine and Salomone, 2013), as they cannot change the GMG. Dyad fixed effects, denoted δ_{od}, are used to control for characteristics of country pairs that could differently affect the migration costs of females and males, such as the distance between origin and destination countries (Beine and Salomone, 2013). Together with the destination-time fixed effects, this set of fixed effects accounts for potential multilateral resistance to migration.[5] Finally, we follow the literature by clustering standard errors at the origin-year level, because migration outflows could be highly correlated within origin countries at any point in time.

4.2 Addressing endogeneity concerns

Research on the role of individual rights in migration decisions faces a fundamental problem of causal inference. Empirical results are potentially biased due to omitted confounding factors and reverse causality.

First, changes in institutional quality over time may be correlated with changes in various other factors, such as conflict or income inequality, that are also motives for migration (Baudassé, Bazillier and Issifou, 2018). Controlling for observable and unobservable country characteristics can mitigate this identification problem only to some

[5] The concept of *multilateral resistance* embodies the idea that migration from one country to another depends not only on the characteristics of the destination country, but also on the characteristics of alternative destination countries (Beine, Bertoli and Fernández-Huertas Moraga, 2016).

extent. In this paper, we explore whether gender differences in the protection of individual rights explain the GMG in an origin country. Comparing women and men *within* an origin country cancels out the impact of country-specific factors that affect the migration decisions of women and men in the same way. This should dramatically narrow the scope for omitted confounding factors biasing our coefficient estimates for the effect of individual rights on the migration gap. In this research design, an omitted variable bias could only result from the omission of variables that differently affect the migration decisions of men and women.

Second, not only do institutions influence migration, but migration can also influence institutions. Migrants can, for example, affect individual rights in their origin countries by voting from abroad or voicing their opinion and thereby affecting the voting behavior of those left behind. This is in line with empirical evidence that international migration promotes democratization and female political empowerment in origin countries (Barsbai et al., 2017; Docquier, Lodigiani and Rapoport, 2016; Lodigiani and Salomone, 2020).

To ensure identification in spite of potential endogeneity, we rely on an instrumental variable (IV) strategy. The chosen instruments need to have a significant impact on gender equality in economic and political rights, respectively, but they may not directly influence the GMG. In addition, this instrument should be orthogonal to origin and destination country characteristics that could simultaneously affect individual rights and migration decisions.

Following Neumayer and Plümper (2010), we build spatially lagged indicators of gender equality in individual rights to serve as our IVs (Acemoglu et al., 2019, use a similar identification strategy for political rights in general). Our choice of instruments rests on the assumption that gender equality in rights diffuses across countries based on adaptation and learning processes (see Elkins and Simmons, 2005, for a theoretical framework). For instance, Miho, Jarotschkin and Zhuravskaya (2022) provide evidence for the diffusion of gender norms via social interactions, using Josef Stalin's ethnic deportations as a natural experiment. Hughes, Krook and Paxton (2015) demonstrate the regional diffusion of gender quotas in politics (see also Paxton, Hughes and Barnes, 2021). Neumayer and de Soysa (2011) provide evidence for the spatial diffusion of women's economic and social rights.

The most important decision involved in modeling spatial dependence concerns the choice of the weighting matrix, which links units (in our case origin countries) to each other (Neumayer and Plümper, 2016). Here, we model the connectivity between countries based on their geographic distance. More precisely, we use the inverse logarithmic

distance between two countries' most populated cities in kilometers from the CEPII gravity database (Head, Mayer and Ries, 2010; Neumayer and Plümper, 2016; Plümper and Neumayer, 2010). Distance also serves as a proxy for cultural and linguistic differences between the two countries, which constitute barriers to norm diffusion, as well as for the intensity of economic, political, and social ties.

We instrument gender differences in the protection of individual rights in the origin country o at time $t-1$ with the following IV:

$$\text{IV}_{o,t-1} = \sum_{l \neq o} (w_{ol} \text{Rights}_{l,t-1}) \tag{9}$$

where the spatial weighting matrix w_{ol} denotes the degree to which an origin country o is connected to another country l ($\neq o$) as the reversed distance between them.[6] Note that this spatially lagged instrument is not row-standardized, as suggested by Neumayer and Plümper (2016).

The positive correlation between the endogenous variables and their respective IVs is depicted in Figure A.3. To demonstrate the validity of the instrument for each type of rights, we show that the IVs are not correlated with the pre-trend in the GMG. To this end, we divide our sample period into two sub-periods and study whether the trend in the IVs over the later sub-period is correlated with the trend in the GMG over the earlier sub-period. As we use an unbalanced panel dataset that covers an increasing number of dyads over time, we perform this exercise for the entire period (1961-2019) and for the periods 1970-2019, 1980-2019, and 1990-2019. Results are reported in Table A.4. The OLS coefficients obtained are not statistically significant except for two coefficients with opposing signs, which supports the assumption that the instruments are valid (i.e., not violating the exclusion restriction), as the pre-trend in the GMG cannot predict subsequent changes in gender equality in the protection of individual rights in the origin country.

5 Results

5.1 Baseline results

Average effects. Our baseline estimation results are reported in Table 1. Column (1) tests the effect of increasing gender equality in economic rights in the origin country on

[6] The distance between countries is re-scaled between zero and unity. It is then reversed such that a country d that is close to country o gets a larger weight than another country d' which is farther away.

the GMG. Column (2) tests the effect of increasing gender equality in political rights and civil liberties in the origin country. In each case, we report the results of the IV regression in which we instrument equality in individual rights with a spatially lagged indicator. Note that due to the construction of our dependent variable, coefficient estimates indicate effects conditional on non-zero male and female migration flows.

We find that equality in economic and political rights has, on average, a positive effect on the GMG. Increasing equality in economic rights by one standard deviation (0.318) leads to a 5.6% increase in the GMG, that is, in the relative difference between male and female migration. Increasing equality in political rights by one standard deviation (0.244) leads to a 37.4% increase in the GMG. These results are in line with Hypothesis 1a and refute Hypothesis 1b. With respect to our control variables, we find that civil violence and interstate war have a positive and significant effect on the GMG. This indicates that women are not only disproportionately affected by conflict (see Plümper and Neumayer, 2006), but it is also more difficult for them to leave a conflict-torn country.

The K-Paap statistics are well above the Stock-Yogo critical value, which indicates that the instruments are not weak. The positive and significant first-stage results support the theoretical argument behind our IV strategy that gender equality in rights is subject to spatial diffusion. Complementary results from OLS regressions in which we treat equality in individual rights as exogenous are reported in Columns (1) and (2) of Table A.6.

Heterogeneous effects. Next, we test Hypothesis 2 that increasing income per capita in the origin country might change the way in which gender equality in rights impacts the GMG. We test this hypothesis by including interaction terms between the origin country's log-income per capita and each index of gender equality in individual rights. The results are presented in Columns (3) and (4) of Table 1.

For both economic and political individual rights, the interaction term is positive and significant. This is in line with our theoretical prediction that the effect of giving women more equal rights and thus providing them with the means to migrate becomes less important the richer a country is. At the same time, in richer countries gender equality provides a relatively stronger incentive for women to stay and not move to another country.

We plot the marginal effects on the GMG over the distribution of income observed in origin countries in Figure 2. This allows us to not only judge in which direction the effect of gender equality on the GMG shifts as countries grow richer, but we can

Table 1: Baseline Results

	Average effects		Heterogeneous effects	
	(1)	(2)	(3)	(4)
$\text{EconRights}_{o,t-1}$	0.1750***		-1.5432***	
	(0.0145)		(0.0778)	
$\text{PolRights}_{o,t-1}$		1.5331***		-2.9770***
		(0.1906)		(0.1674)
$\text{EconRights}_{o,t-1}$ * $\ln \text{GDPpc}_{o,t-1}$			0.1805***	
			(0.0084)	
$\text{PolRights}_{o,t-1}$ * $\ln \text{GDPpc}_{o,t-1}$				0.3332***
				(0.0166)
$\ln \text{GDPpc}_{o,t-1}$	0.0049	-0.0078	-0.0473***	-0.1766***
	(0.0094)	(0.0111)	(0.0100)	(0.0138)
$\text{IntWar}_{o,t-1}$	0.0220***	0.0097	0.0184***	0.0133**
	(0.0055)	(0.0062)	(0.0052)	(0.0053)
$\text{CivViol}_{o,t-1}$	0.0408***	0.0416***	0.0408***	0.0325***
	(0.0047)	(0.0060)	(0.0053)	(0.0045)
$\text{Democracy}_{o,t-1}$	-0.0061***	-0.0175***	-0.0026***	-0.0009
	(0.0006)	(0.0017)	(0.0006)	(0.0010)
Observations	74,223	77,269	74,223	77,269
Destination-year FE	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	8,565.397	245.893	2,153.416	257.764
First-stage coefficients	0.2636***	0.0456***	0.6273***	0.2193***
	(0.0030)	(0.0029)	(0.0151)	(0.0100)
			-0.1071***	-0.0301***
			(0.0139)	(0.0076)

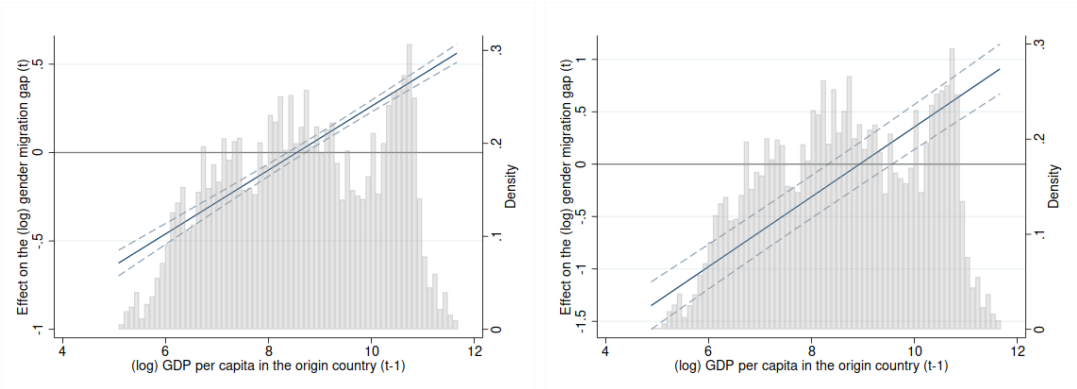
Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

also see whether the sign of the effect changes, as expected in Hypothesis 2. We find that increasing gender equality in economic or political rights in lower-income countries reduces the GMG by allowing relatively more women to migrate. The graph on the left shows that the effect of gender equality in economic rights becomes positive at a GDP per capita in the origin country above 5,165 dollars (the sample mean of GDP per capita is 14,640 USD). Note that countries with a GDP per capita lower than 5,165 USD are almost exclusively low- and lower-middle-income countries. The graph on the right shows that the effect of gender equality in political rights becomes positive at a GDP per capita in the origin country above 7,590 USD (which primarily describes high-income countries). In sum, these results are consistent with Hypothesis 2. In lower-income countries, gender equality allows women to emigrate, whereas in higher-income countries it gives them an incentive not to do so.

Table A.7 shows the results of our baseline specification after splitting the sample into low-, lower middle-, higher middle-, and high-income origin countries. While coefficients cannot be compared across sub-samples, the results confirm a negative effect of increasing rights in low-income countries and a positive effect in high-income countries.

Finally, Table A.8 shows the results after splitting the sample into origin countries where the rate of female migration is higher than that of males, and origin countries where it is lower. We find that in countries where females already migrate at least as much as males, additional rights have no significant impact (columns 1 and 2). Our baseline findings are thus driven by countries where the gender migration gap is indeed positive, that is where females migrate less than males (columns 3 and 4). Note that the two samples exhibit virtually the same mean income per capita in origin countries. This supports our narrative that increasing equality in rights equalizes migration behavior.

Figure 2: Marginal Effects of Rights Equality on the Gender Migration Gap



Note: Marginal effects of gender equality in individual rights on the GMG at different levels of log-income per capita in the origin country, based on Columns (3) and (4) in Table 1. The graph on the left (/right) depicts the marginal effect of equality in economic (/political) rights. Dashed lines indicate 95% confidence intervals. Equality in individual rights has a statistically significant effect on the GMG when the upper and lower bounds of the confidence interval are either both above or both below zero. The histogram and the right vertical axis depict the distribution of our sample over levels of income per capita in origin countries.

Female migration. To ascertain whether female migration is changing when gender equality increases, we estimate the effect on female and male migration separately. Our dependent variable is the logarithm of the female (/male) migration rate. In addition, we control for the male (/female) migration rate. These models link our study more closely to the literature on female migration (Ruyssen and Salomone, 2018). Results are reported in Table 2. Columns (1) to (4) show how equality in rights affects the female migration rate. In Columns (1) and (3), the average effects are negative and significant which is in line with the baseline findings. An increase in gender equality in both economic and political rights leads to a decrease in female migration, which in turn increases the GMG. In Column (2) and (4), the interaction terms are negative and significant which is also consistent with both our theoretical predictions and baseline results. In poorer countries, women emigrate more when equality in rights increases, and this effect turns around for richer countries. The marginal effects of gender equality in rights corresponding to Columns (2) and (4) are shown in Figure 3.

Our findings are only partially in line with those of Neumayer and Plümper (2021) who find that the protection of women's economic rights in origin countries increases the share of female migrants arriving in Germany. We find the same effect (which is

equivalent to a shrinking GMG in the context of our study) only in poorer countries of origin.[7]

For comparison, Columns (5) to (8) show how equality in rights affects the male migration rate. We find that men also contribute to the observed changes in the GMG. Average effects are displayed in Columns (5) and (7). However, the results in Columns (6) and (8) are more insightful. Column (6) shows that women and men react in opposite directions to changes in gender equality in economic rights. Column (8) shows that in most countries, increasing gender equality in political rights decreases male emigration. This effect becomes smaller with increasing income and it is only insignificant in the richest countries. The marginal effects are plotted in Figure A.4.

We find a positive coefficient for the male migration rate in Columns (1) to (4), and a positive coefficient for the female migration rate in Columns (5) to (8). This underlines the crucial role of family migration, family reunification, and network effects, also highlighted by Ferrant and Tuccio (2015).

Overall, these results indicate that increasing gender equality in individual rights affects women's and men's migration decisions and both affect the GMG in the same direction. Women behave exactly as predicted in Section 3. Men prefer to stay in the origin country when women enjoy more equal political rights, particularly if they reside in poor countries. The same is true with respect to equality in economic rights, but only in lower-income countries. The fact that men in higher-income countries emigrate more when women enjoy more equal economic rights could have to do with women's ability to manage the economic affairs of the household in the absence of their husbands, but this question is beyond the scope of this article.

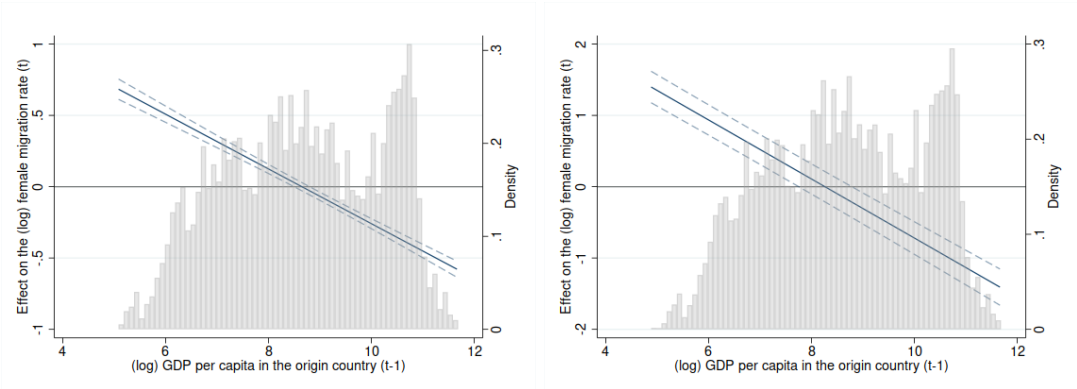
[7]However, we can replicate the result of Neumayer and Plümper (2021) if we limit our sample to both (1) migration to Germany and (2) the time period 2009-2017. Results available on request. This subsample is heavily influenced by the 2015 European migrant crisis, which apparently follows a different data-generating process than our larger sample.

Table 2: Female *versus* Male Migration

	$\ln \mathrm{M}^{fod,t}$				$\ln \mathrm{M}^{mod,t}$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\mathrm{EconRights}_{o,t-1}$	-0.1650***	1.6593***			0.2444***	-1.6250***		
	(0.0145)	(0.0797)			(0.0172)	(0.0889)		
$\mathrm{EconRights}_{o,t-1}$ * $\ln \mathrm{GDPpc}_{o,t-1}$		-0.1918***				0.1964***		
		(0.0089)				(0.0099)		
$\mathrm{PolRights}_{o,t-1}$			-2.1926***	3.4190***			1.8275***	-3.2885***
			(0.1946)	(0.1559)			(0.1948)	(0.1871)
$\mathrm{PolRights}_{o,t-1}$ * $\ln \mathrm{GDPpc}_{o,t-1}$				-0.4139***				0.3774***
				(0.0160)				(0.0186)
$\ln \mathrm{M}_{mod,t}$	0.8918***	0.8946***	0.8853***	0.8902***				
	(0.0024)	(0.0022)	(0.0026)	(0.0024)				
$\ln \mathrm{M}_{fod,t}$					0.9560***	0.9551***	0.9585***	0.9567***
					(0.0022)	(0.0023)	(0.0027)	(0.0024)
Observations	74,223	74,223	77,269	77,269	74,223	74,223	77,269	77,269
Destination-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	8,622.103	2,179.698	244.532	256.402	8643.728	2,181.795	242.587	256.766
First-stage coefficients	0.2630***	0.6267***	0.0454***	0.2190***	0.2630***	0.6248***	0.0453***	0.2198***
	(0.0028)	(0.0168)	(0.0028)	(0.0105)	(0.0029)	(0.0153)	(0.0030)	(0.0097)
		-0.1071***		-0.0300***		-0.1044***		-0.0309***
		(0.0139)		(0.0074)		(0.0143)		(0.0073)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) female migration rate in columns (1) to (4), and the (log) male migration rate in columns (5) to (8). Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, civil violence, interstate war, and democracy. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Figure 3: Marginal Effects of Rights Equality on the Female Migration Rate



Note: Marginal effects of gender equality in individual rights on the female migration rate at different levels of log-income per capita in the origin country, based on Columns (2) and (4) in Table 2. The graph on the left (/right) depicts the marginal effect of equality in economic (/political) rights. Dashed lines indicate 95% confidence intervals. Equality in individual rights has a statistically significant effect on the migration rate when the upper and lower bounds of the confidence interval are either both above or both below zero. The histogram and the right vertical axis depict the distribution of our sample over levels of income per capita in origin countries.

5.2 Extensions and robustness tests

Before we validate the robustness of our estimates, we first present two extensions to our empirical analysis: (1) a horse race between equality in economic and political rights and (2) a test of whether gender equality in rights in the destination country is a determinant of the GMG. We then run a series of robustness tests in which we use alternative model specifications, dependent variables, independent variables, instrumental variables, and lagged effects. All results are reported in the appendix and discussed hereafter.

Horse race. In Table A.9, we report the results of a model including economic and political rights equality simultaneously to evaluate whether one category of rights dominates the other in explaining the GMG. Columns (1) and (2) reproduce our baseline regressions in Table 1 based on the sample for which data on both economic and political rights are available. We then include economic and political rights equality simultaneously in Column (3). Columns (4) to (6) add the respective interaction terms with income per capita. The results of the horse race are similar to our baseline coefficients, but the effect of political rights becomes more similar to that of economic rights. This

test underlines that gender equality in both economic and political rights matters for the GMG.

Gender equality in the destination country. Next, we test whether gender equality in rights in the destination country affects the GMG. Given that equality in rights in origin countries affects female emigration, it is not far-fetched that the level of gender discrimination also affects the choice of destination countries, especially for women. To test this conjecture, we estimate a model with the following specification:

$$\ln \mathrm{GMG}_{od,t} = \beta_0 + \beta_1 \mathrm{Rights}_{d,t-1} + \Gamma \boldsymbol{X}'_{d,t-1} + \gamma_{o,t} + \delta_{od} + \epsilon_{od,t} \tag{10}$$

where $\mathrm{Rights}_{d,t-1}$, is the level of gender equality in the protection of individual rights in destination country d at time $t-1$, $\boldsymbol{X}'_{d,t-1}$ includes the (log) GDP per capita, interstate war, and democracy as destination-country controls at time $t-1$. $\gamma_{o,t}$ denotes origin country-year fixed effects and δ_{od} are dyad fixed effects. Results are reported in Table A.10 and show no significant effect of gender equality in the destination country on the GMG.

Alternative model specifications. Results reported in Table A.11 demonstrate the robustness of our baseline model to alternative error clustering and to dropping one control variable. In Columns (1) and (2), standard errors are clustered at the dyad level instead of the origin-year level typically used in the literature. This accounts for the fact that migration flows could be particularly highly correlated along country dyads. The Polity2 index of democracy in the origin country is dropped in Columns (3) and (4), as it could introduce bias due to reverse causality (Docquier, Lodigiani and Rapoport, 2016, argue that emigration promotes democratization). Our results are robust to these alternative model specifications.

Alternative dependent variables. Next, we test the robustness of our baseline model with respect to the migration data we use. First, we use only the DEMIG C2C dataset (DEMIG, 2015) to compute the GMG for the period 1961-2011. Second, we use only the OECD's International Migration Database (OECD, 2020) to compute the GMG for the period 1996-2019. Third, we use the OECD data, but instead of using *inflows of foreign population by nationality*, as in our baseline sample, we use data on *inflows of foreign workers by nationality* (available from 1997 to 2019). To compute the gender-specific migration rate of working-age individuals we divide these flows by the *working-age* population of the origin country.

Results based on these alternative GMG measures are reported in Table A.12. We find a positive and significant effect of gender equality in both economic and political rights. These results confirm that our main findings are robust to changing which data source we use (DEMIG C2C or OECD) and, therefore, also to the time period (Columns 1 to 4). They are also robust to an alternative definition of migrants (foreign individuals vs foreign workers, see Columns 5 and 6). Corresponding OLS estimates, which treat equality in individual rights as exogenous, are reported in Columns (3) to (8) of Table A.6.

Alternative independent variables. Next, we test the robustness of our baseline specification to the use of alternative measures of individual rights. We instrument each of these variables as described in equation (9). Results are reported in Table A.13.

We use four sub-indices of the WBL index that measure gender equality in different economic rights (Columns 1 to 4). The first sub-index measures rights in the *workplace*, i.e., whether women can get a job in the same way as men, whether the law prohibits gender discrimination in employment, and whether it protects women against sexual harassment. The second sub-index measures rights relevant to *entrepreneurship*, i.e., access to credit, the ability to sign a contract, to register a business, and to open a bank account. The third sub-index relates to *assets*. It measures equality in ownership rights and inheritance rights. The fourth sub-index measures the right to *mobility*, i.e., where to live, traveling outside the home, the ability to apply for a passport, and traveling abroad. We find that the coefficients on all four indices are positive and significant. This corroborates our baseline findings for gender equality in economic rights.

For political rights, we use three sub-indices instead of the Global Exclusion by Gender Index of V-Dem (Columns 5 to 7). We ignore any dimensions that could be related to non-political rights (equal access to state jobs and state business) and could confound our results for political rights with the influence of economic rights. First, we use the sub-index measuring gender equality in civil liberties (labeled *v2clgencl* in the V-Dem dataset). Second, we use the sub-index measuring equal access to public services (labeled *v2peapsgen*). Third, we use the sub-index for gender equality in political power (labeled *v2pepwrgen*). We find a positive and significant coefficient of gender equality in these three dimensions of political rights. This corroborates our baseline findings for gender equality in political rights.

Alternative instruments and lagged variables. To validate the robustness of our identification strategy, (1) we use differently constructed IVs and (2) we test the long-term effect of gender inequality in rights on the GMG. Results are reported in Table A.14.

First, we build alternative spatial IVs for individual rights equality that exclude direct neighbors of the origin country (Columns 1 and 2). Ignoring neighboring countries' potential influence on gender equality in rights serves to rule out any concerns about the exogeneity of our instruments. Otherwise, it could have been questioned whether emigrants influence gender equality in neighboring countries or whether gender equality in the origin country and its neighbors is determined by some unobservable factors that are directly related to emigration from the origin country. The correlation between this alternative IV and our baseline IV is equal to 0.99 for both economic and political rights and our baseline results are robust.

We also create alternative IVs by replacing the weighting matrix with the difference between countries' income per capita (Columns 3 and 4).[8] This reflects the idea that what matters for the diffusion of rights across countries is not their spatial proximity but their similarity in terms of economic development. The correlations between these alternative IVs and our baseline IVs are, respectively, 0.99 and 0.98 for economic and political rights, and our baseline results remain robust.

Finally, we investigate the longer-term impact of gender equality in individual rights protection on the GMG (Columns 5 to 8). For that purpose, we use economic and political rights indicators not with a 1-year lag, but with a 5-year and a 10-year lag. These lagged rights indicators are instrumented with our lagged spatial IVs. We find a lasting effect of gender equality in both types of individual rights, which is even increasing over time. This suggests that changes in gender equality may take years to build up their full impact on the GMG. In other words, women do not seem to instantly react to these newly gained or lost freedoms.

6 Conclusions

This study sheds light on the relationship between gender equality in rights and the gender migration gap. We rely on a gender-specific RUM model of migration to derive a gender migration gap in a gravity-type setting that is readily estimable. Our estimation

[8] We use the absolute income difference between countries re-scaled between zero and unity. The scale is then reversed such that a country d that is close to country o in terms of GDP per capita gets a larger weight than another country d' which is farther away.

strategy consists in using differences in the rights of women and men to explain gender differences in migration decisions. To ensure causal identification, we use spatial lags of gender equality in rights in other countries as an instrument in IV estimations.

We find – in contrast to the existing literature – that more equality in both economic and political rights deepens the gender migration gap. The difference in results can be explained by our substantially larger sample and the fact that we are studying actual migration flows. Our result holds on average and for high-income countries. However, improving gender equality in origin countries with low income per capita reduces the gender migration gap. This is consistent with our theoretical predictions. Reduced gender discrimination provides females with the financial means to emigrate and financial constraints are a serious obstacle to international migration specifically in low-income countries.

The literature on the relationship between individual rights and migration has struggled to mitigate endogeneity problems. Here, we significantly reduce the scope for endogeneity bias. Our results add to the narrow literature on female migration but also to the broader literature on institutions and migration. Our findings indicate that the relationship between international migration flows and individual rights is complex and depends, in theoretically predictable ways, on other country characteristics, such as income per capita. Most importantly, strengthening individual rights in low-income countries by supporting democratic and free market reforms (or even only enhanced political and economic rights for females) appears to have the unintended consequence of increasing emigration rates. While this may not be an argument against supporting such reforms, policymakers should be prepared for these side effects.

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A Appendix

A.1 Data characteristics

Table A.1: Definitions of Variables and Data Sources

Variable	Definition & Source
$\ln \mathrm{GMG}_{od,t}$	Logarithm of the gender migration gap. It is computed as the (log) ratio of the bilateral migration rate of males over that of females. **Source**: OECD International Migration Database (OECD, 2020), DEMIG-C2C dataset, v1.2 (Vezzoli, Villares-Varela and de Haas, 2014; DEMIG, 2015) & World Bank (2022*b*).
$\ln \mathrm{M}_{fod,t}$	Logarithm of the female bilateral migration rate. This rate is computed as the female bilateral migration flow from the origin to the destination country, divided by the female population of the origin country. **Source**: OECD International Migration Database (OECD, 2020), DEMIG-C2C dataset, v1.2 (Vezzoli, Villares-Varela and de Haas, 2014; DEMIG, 2015) & World Bank (2022*b*).
$\ln \mathrm{M}_{mod,t}$	Logarithm of the male bilateral migration rate. This rate is computed as the male bilateral migration flow from the origin to the destination country, divided by the male population of the origin country. **Source**: OECD International Migration Database (OECD, 2020), DEMIG-C2C dataset, v1.2 (Vezzoli, Villares-Varela and de Haas, 2014; DEMIG, 2015) & World Bank (2022*b*).
$\mathrm{EconRights}_{o,t-1}$	Index of gender equality in economic rights, rescaled, ranging from strongly unequal (0) to equal (1). This indicator is based on four binary variables of the subcategory *Pay*: (i) Does the law mandate equal remuneration for work of equal value? (ii) Can a woman work at night in the same way as a man? (iii) Can a woman work in a job deemed dangerous in the same way as a man? (iv) Can a woman work in an industrial job in the same way as a man? Answers are based on codified law. **Source**: (World Bank, 2022*a*, rev: Feb 28, 2023).
$\mathrm{PolRights}_{o,t-1}$	Index of gender equality in political rights and civil liberties (v2xpe_exlgender), rescaled, ranging from strongly unequal (0) to equal (1). This indicator is based on five variables: (i) Is political power distributed according to gender? (ii) Do women enjoy the same level of civil liberties as men? (iii) Is access to basic public services, such as order and security, primary education, clean water, and healthcare, distributed equally according to gender? (iv) Are state jobs equally open to qualified individuals regardless of gender? (v) Are state business opportunities equally available to qualified individuals or firms regardless of gender? **Source**: (Coppedge et al., 2022, v12).
$\mathrm{GDPpc}_{o,t-1}$	Logarithm of GDP per capita in the origin country in constant 2010 US$. **Source**: World Bank (2022*b*).
$\mathrm{IntWar}_{o,t-1}$	Magnitude score for international war. Index ranges from 0 to 10 with higher values indicating a stronger impact. **Source**: Marshall (2019).
$\mathrm{CivViol}_{o,t-1}$	Magnitude score for civil violence. Index ranges from 0 to 10 with higher values indicating a stronger impact. **Source**: Marshall (2019).
$\mathrm{Democracy}_{o,t-1}$	Index of democracy (polity2), ranging from strongly autocratic (-10) to strongly democratic (+10). **Source**: Marshall (2019).

Table A.2: Summary Statistics

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**	**N**
$\text{GMG}_{od,t}$	1.437	2.465	0.010	223.528	77,269
$\text{M}_{fod,t}$	802	3,725	1	164,984	77,269
$\text{M}_{mod,t}$	924	5,065	1	309,880	77,269
$\text{EconRights}_{o,t}$	0.547	0.318	0	1	74,597
$\text{PolRights}_{o,t}$	0.688	0.244	0.020	0.987	77,269
$\text{GDPpc}_{o,t}$	14,636	18,358	132	116,232	77,208
$\text{IntWar}_{o,t}$	0.039	0.422	0	7	74,451
$\text{CivViol}_{o,t}$	0.094	0.521	0	4	74,451
$\text{Democracy}_{o,t}$	4.346	6.486	-10	10	74,417

Table A.3: Correlations

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(a) $\text{GMG}_{od,t}$	1						
(b) $\text{EconRights}_{o,t}$	-0.071***	1					
(c) $\text{PolRights}_{o,t}$	-0.079***	0.403***	1				
(d) $\text{GDPpc}_{o,t}$	-0.053***	0.439***	0.518***	1			
(e) $\text{IntWar}_{o,t}$	0.007*	-0.052***	-0.084***	-0.015***	1		
(f) $\text{CivViol}_{o,t}$	-0.006***	-0.100***	-0.119***	-0.093***	-0.016***	1	
(g) $\text{Democracy}_{o,t}$	-0.080***	0.470***	0.612***	0.421***	-0.074***	0.037***	1

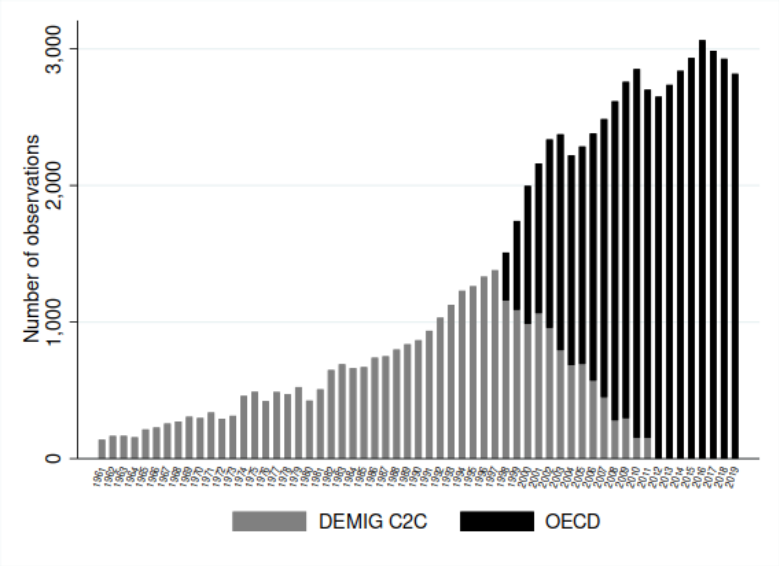
Note: Correlation matrix based on the entire sample, as described in Table A.2. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.4: List of Countries

Origin countries
Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Cote d'Ivoire, Cape Verde, Colombia, Comoros, Congo, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of Congo, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Eswatini, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Luxembourg, Madagascar, Malaysia, Malawi, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Guinea, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Panama, Papua, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Saudi Arabia, Senegal, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, South Korea, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Uzbekistan, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

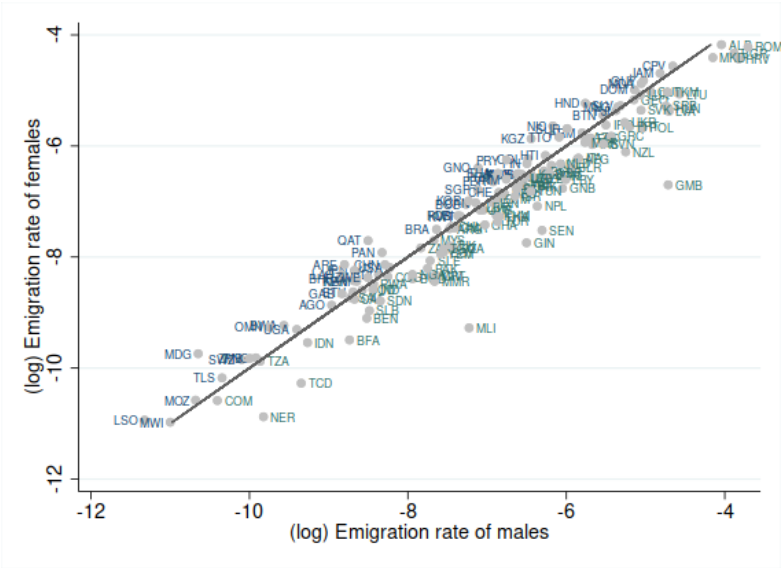
Destination countries
Australia, Austria, Belgium, Brazil, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, United States, Uruguay.

Figure A.1: Migration Data Sources



Note: Distribution of the 77,269 observations across data sources – the DEMIG C2C dataset (DEMIG, 2015) and the OECD International Migration Database (OECD, 2020) – and over years.

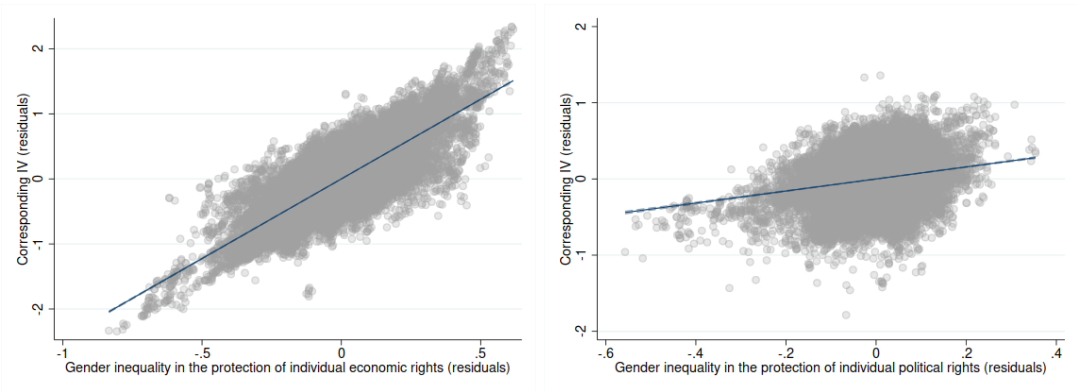
Figure A.2: Gender Migration Gap in 2019



Note: Association between the (log) emigration rates of females and males (data averaged for each origin country over all destinations and years). Migration rates by construction account for the male or female population size and the logarithm normalizes the distribution. In countries below (/above) the 45-degree line, males (/females) emigrate at higher rates than females (/males).

A.2 Validity of the instrumentation strategy

Figure A.3: Correlation between Endogenous and Instrumental Variables



Note: Conditional correlation between the endogenous variables and the corresponding IVs. The plotted residual of each variable is obtained after controlling for origin-destination and destination-year fixed effects. The graph on the left (/right) shows the relationship for equality in economic (/political) rights.

Table A.5: Testing the Exclusion Restriction

	Gender equality in individual economic rights			
	1961-2019	1970-2019	1980-2019	1990-2019
	$\Delta_{1991-2019} \ln \mathrm{IV}_o$	$\Delta_{1995-2019} \ln \mathrm{IV}_o$	$\Delta_{2000-2019} \ln \mathrm{IV}_o$	$\Delta_{2005-2019} \ln \mathrm{IV}_o$
$\Delta_{1961-1990} \ln \mathrm{GMG}_{od}$	-0.025			
	(0.160)			
	[78]			
$\Delta_{1970-1994} \ln \mathrm{GMG}_{od}$		-0.005		
		(0.107)		
		[159]		
$\Delta_{1980-1999} \ln \mathrm{GMG}_{od}$			0.220***	
			(0.078)	
			[368]	
$\Delta_{1990-2004} \ln \mathrm{GMG}_{od}$				0.168***
				(0.045)
				[629]
	Gender equality in individual political rights			
	1961-2019	1970-2019	1980-2019	1990-2019
	$\Delta_{1991-2019} \ln \mathrm{IV}_o$	$\Delta_{1995-2019} \ln \mathrm{IV}_o$	$\Delta_{2000-2019} \ln \mathrm{IV}_o$	$\Delta_{2005-2019} \ln \mathrm{IV}_o$
$\Delta_{1961-1990} \ln \mathrm{GMG}_{od}$	0.070			
	(0.065)			
	[78]			
$\Delta_{1970-1994} \ln \mathrm{GMG}_{od}$		-0.007		
		(0.055)		
		[070]		
$\Delta_{1980-1999} \ln \mathrm{GMG}_{od}$			-0.018	
			(0.031)	
			[371]	
$\Delta_{1990-2004} \ln \mathrm{GMG}_{od}$				0.046**
				(0.019)
				[635]

Note: OLS coefficient estimates with standard errors in parentheses and numbers of observations in brackets. The latter is the number of country pairs available over the respective sample period, which varies because we use unbalanced panel data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

A.3 Extensions and robustness tests

Table A.6: OLS Results

	DEMIG & OECD		DEMIG		OECD		OECD (workers)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{EconRights}_{o,t-1}$	0.0392***		0.0547***		0.0157		0.0648***	
	(0.0127)		(0.0167)		(0.0168)		(0.0240)	
$\text{PolRights}_{o,t-1}$		-0.0409		0.0420		-0.2149***		0.2418**
		(0.0334)		(0.0416)		(0.0617)		(0.1109)
$\ln \text{GDPpc}_{o,t-1}$	0.0100	0.0072	0.0505***	0.0490***	0.0514***	0.0584***	0.0913***	0.0934***
	(0.0097)	(0.0093)	(0.0126)	(0.0120)	(0.0144)	(0.0143)	(0.0242)	(0.0250)
$\text{IntWar}_{o,t-1}$	0.0229***	0.0195***	0.0228***	0.0193***	-0.0097	-0.0090	0.0037	0.0045
	(0.0053)	(0.0052)	(0.0048)	(0.0047)	(0.0064)	(0.0062)	(0.0112)	(0.0113)
$\text{CivViol}_{o,t-1}$	0.0372***	0.0315***	0.0471***	0.0324***	0.0172***	0.0170***	0.0305***	0.0286**
	(0.0048)	(0.0046)	(0.0067)	(0.0069)	(0.0051)	(0.0051)	(0.0118)	(0.0119)
$\text{Democracy}_{o,t-1}$	-0.0058***	-0.0051***	-0.0050***	-0.0047***	-0.0023**	-0.0014	-0.0023	-0.0035**
	(0.0006)	(0.0007)	(0.0007)	(0.0007)	(0.0011)	(0.0011)	(0.0016)	(0.0017)
Observations	74,223	77,269	40,589	43,312	45,524	46,027	19,356	19,532
Destination-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes	yes	yes
Estimator	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
R-squared	0.7608	0.7518	0.7278	0.7225	0.8548	0.8539	0.8829	0.8823

Note: OLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Regressions in columns (1) and (2) include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.7: Results by Income Groups

	Low income		Lower middle income		Upper middle income		High income	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{EconRights}_{o,t-1}$	-0.1780***		-0.2534***		0.0884***		0.2124***	
	(0.0572)		(0.0320)		(0.0295)		(0.0221)	
$\text{PolRights}_{o,t-1}$		-0.5938***		0.1034		0.0965		2.6932**
		(0.1729)		(0.1900)		(0.2248)		(1.0644)
Observations	6,642	6,657	19,797	19,864	19,844	19,910	27,707	27,927
Destination-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	450.947	322.093	1,939.427	150.437	1,807.849	75.926	5,185.546	20.868
First-stage coefficients	0.3958***	0.2489***	0.3154***	0.0746***	0.2610***	0.0542***	0.2846***	0.0191***
	(0.0179)	(0.0134)	(0.0072)	(0.0059)	(0.0065)	(0.0060)	(0.0040)	(0.0043)

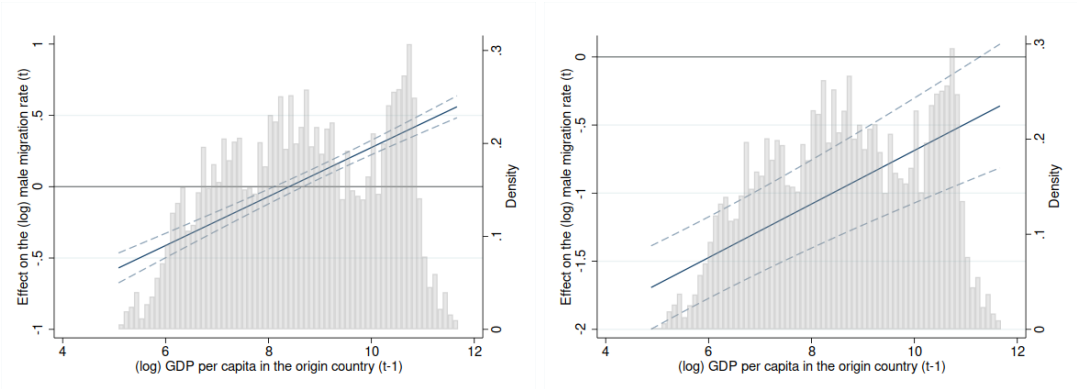
Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.8: Origin Countries Where Female Migration Dominates

	$M_{mod,t} < M_{fod,t}$		$M_{mod,t} > M_{fod,t}$	
	(1)	(2)	(3)	(4)
$\text{EconRights}_{o,t-1}$	-0.0086		0.1412***	
	(0.0144)		(0.0164)	
$\text{PolRights}_{o,t-1}$		-0.2972		1.0414***
		(0.2894)		(0.1354)
Observations	31,346	32,238	41,951	44,067
Destination-year FE	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	5,750.939	74.772	7,386.193	304.091
First-stage coefficients	0.2905***	0.0262***	0.2501***	0.0595***
	(0.0036)	(0.0029)	(0.0030)	(0.0033)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Regressions in Columns (1) and (2) includes origin countries where the rate of female migration is higher than that of males. Regressions in Columns (3) and (5) includes origin countries where the rate of female migration is lower than that of males. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, interstate war, and democracy. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Figure A.4: Marginal Effects of Rights Equality on the Male Migration Rate



Note: Marginal effects of gender equality in individual rights on the male migration rate at different levels of log-income per capita in the origin country, based on Columns (6) and (8) in Table 2. The graph on the left (/right) depicts the marginal effect of equality in economic (/political) rights. Dashed lines indicate 95% confidence intervals. Equality in individual rights has a statistically significant effect on the migration rate when the upper and lower bounds of the confidence interval are either both above or both below zero. The histogram and the right vertical axis depict the distribution of our sample over levels of income per capita in origin countries.

Table A.9: Horse Race

	(1)	(2)	(3)	(4)	(5)	(6)
$\text{EconRights}_{o,t-1}$	0.1750***		0.1703***	-1.5432***		-0.9995***
	(0.0154)		(0.0165)	(0.0809)		(0.0932)
$\text{PolRights}_{o,t-1}$		1.4711***	1.0556***		-2.9547***	-1.4756***
		(0.2059)	(0.1728)		(0.1830)	(0.2097)
$\text{EconRights}_{o,t-1}$ * $\ln \text{GDPpc}_{o,t-1}$				0.1805***		0.1178***
				(0.0090)		(0.0105)
$\text{PolRights}_{o,t-1}$ * $\ln \text{GDPpc}_{o,t-1}$					0.3323***	0.1691***
					(0.0213)	(0.0234)
Observations	74,223	74,223	74,223	74,223	74,223	74,223
Destination-year FE	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	8,565.397	170.842	97.225	2,153.416	228.808	na
First-stage coefficients	0.2636***	0.0404***	0.3034***	0.6273***	0.2409***	0.6127***
	(0.0028)	(0.0032)	(0.0031)	(0.0144)	(0.0104)	(0.0246)
			0.0504***	-0.1071***	-0.0600***	0.0104
			(0.0033)	(0.0135)	(0.0075)	(0.1829)
						-0.0019*
						(0.0011)
						-0.0248**
						(0.0116)

Note: IV-2SLS and OLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, civil violence, interstate war, and democracy. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.10: Female's Rights in the Destination Country

	(1)	(2)
$\text{EconRights}_{d,t-1}$	0.1697***	
	(0.0287)	
$\text{PolRights}_{d,t-1}$		9.1439
		(152.9645)
Observations	71,155	72,305
Destination-year FE	yes	yes
Origin-destination FE	yes	yes
Estimator	IV-2SLS	IV-2SLS
K-Paap F Stat.	545.579	2.200
First-stage coefficients	0.0354***	0.0007
	(0.0015)	(0.0005)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, interstate war, and democracy. Note that $\text{CivViol}_{d,t-1}$ is collinear with fixed effects. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.11: Model Specification

	Clustering		∅ Democracy	
	(1)	(2)	(3)	(4)
$\text{EconRights}_{o,t-1}$	0.1750***		0.1840***	
	(0.0270)		(0.0156)	
$\text{PolRights}_{o,t-1}$		1.5331***		1.6926***
		(0.3360)		(0.2089)
Observations	74,223	77,269	74,223	77,269
Destination-year FE	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes
Controls	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	8,503.449	137.575	8,425.261	186.849
First-stage coefficients	0.2636***	0.0456***	0.2617***	0.0425***
	(0.0030)	(0.0037)	(0.0028)	(0.0030)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-destination level (Columns 1 and 2) and the origin-year level (Columns 3 and 4) in parentheses. The dependent variable is the (log) gender migration gap. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, civil violence, interstate war, and democracy (the latter only in Columns 1 and 3). Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.12: Alternative Migration Data

	DEMIG		OECD		OECD (workers)	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{EconRights}_{o,t-1}$	0.2204***		0.0394**		0.0366	
	(0.0235)		(0.0188)		(0.0279)	
$\text{PolRights}_{o,t-1}$		1.6704***		0.1410		0.7111
		(0.2253)		(0.2358)		(0.4369)
$\ln \text{GDPpc}_{o,t-1}$	0.0441***	0.0406***	0.0493***	0.0505***	0.0931***	0.0827***
	(0.0125)	(0.0130)	(0.0149)	(0.0159)	(0.0240)	(0.0289)
$\text{IntWar}_{o,t-1}$	0.0225***	0.0145***	-0.0099	-0.0095	0.0040	0.0031
	(0.0047)	(0.0051)	(0.0072)	(0.0075)	(0.0133)	(0.0141)
$\text{CivViol}_{o,t-1}$	0.0489***	0.0441***	0.0177***	0.0165***	0.0299**	0.0278**
	(0.0071)	(0.0090)	(0.0055)	(0.0056)	(0.0124)	(0.0138)
$\text{Democracy}_{o,t-1}$	-0.0054***	-0.0180***	-0.0023**	-0.0030**	-0.0023	-0.0057**
	(0.0007)	(0.0019)	(0.0011)	(0.0015)	(0.0017)	(0.0026)
Observations	40,589	43,312	45,524	46,027	19,356	19,532
Destination-year FE	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	3,362.752	173.696	7,180.301	173.781	6,492.145	131.041
First-stage coefficients	0.2650***	0.0466***	0.2878***	0.0441***	0.2874***	0.0421***
	(0.0049)	(0.0037)	(0.0035)	(0.0034)	(0.0035)	(0.0038)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.13: Alternative Independent Variables

	Economic rights				Political rights		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\text{Workplace}_{o,t-1}$	0.0912***						
	(0.0114)						
$\text{Entrepreneurship}_{o,t-1}$		0.2964***					
		(0.0265)					
$\text{Assets}_{o,t-1}$			0.3987***				
			(0.0488)				
$\text{Mobility}_{o,t-1}$				0.6367***			
				(0.1006)			
$\text{CivilLiberties}_{o,t-1}$					1.1675***		
					(0.1251)		
$\text{AccessPublicServices}_{o,t-1}$						2.2523***	
						(0.3281)	
$\text{PoliticalPower}_{o,t-1}$							0.8177***
							(0.0900)
Observations	74,223	74,223	74,223	74,223	77,269	77,269	77,269
Destination-year FE	yes	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	1.6e+04	1,529.708	609.484	409.751	627.207	143.929	904.252
First-stage coefficients	0.2889***	0.2150***	0.1209***	0.0582***	0.0616***	0.0296***	0.0968***
	(0.0022)	(0.0055)	(0.0050)	(0.0029)	(0.0023)	(0.0024)	(0.0032)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, civil violence, interstate war, and democracy. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. ***, **, and * denote significance at the 1%, 5%, and 10% level.

Table A.14: Alternative Instruments and Lagged Variables

	Alternative IVs				Lagged variables			
	(excl. direct neighbors)		weighting matrix		5 years		10 years	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{EconRights}_{o,t-1}$	0.1675***		0.1566***					
	(0.0154)		(0.0155)					
	1.1469***							
		(0.1740)		(0.1453)				
$\text{EconRights}_{o,t-5}$					0.1829***			
					(0.0158)			
$\text{PolRights}_{o,t-5}$						1.3880***		
						(0.1310)		
$\text{EconRights}_{o,t-10}$							0.2277***	
							(0.0187)	
$\text{PolRights}_{o,t-10}$								1.4669***
								(0.1211)
Observations	74,209	77,254	74,206	77,019	60,167	64,021	44,998	49,316
Destination-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Origin-destination FE	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Estimator	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS	IV-2SLS
K-Paap F Stat.	4,163.871	468.740	6,038.949	303.404	3,614.581	681.020	2,304.172	621.539
First-stage coefficient	0.2808***	0.0481***	0.8815***	0.1579***	0.2676***	0.0580***	0.2658***	0.0605***
	(0.0034)	(0.0032)	(0.0108)	(0.0093)	(0.0035)	(0.0031)	(0.0045)	(0.0033)

Note: IV-2SLS coefficient estimates with bootstrapped standard errors clustered at the origin-year level in parentheses. The dependent variable is the (log) gender migration gap. Control variables for the following lagged origin country characteristics are included: (log) GDP per capita, civil violence, interstate war, and democracy. Regressions include a binary variable for an observation's data source, taking the value 1 for DEMIG C2C data and 0 for OECD data. In Columns (1) and (2), we use spatially lagged indicators of individual rights equality that exclude direct neighbors of the origin country as instrumental variables. In Columns (3) and (4), we use spatially lagged indicators of individual rights equality weighted by the log-difference between countries' income per capita as instrumental variables. ***, **, and * denote significance at the 1%, 5%, and 10% level.